

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 11 and 13-15 are presently active; Claim 3 having been previously canceled without prejudice, Claims 1-2, 4-10, and 12 having been canceled by the present amendment, and Claims 11 and 13-15 having been amended.

In the outstanding Office Action Claims 1-2, and 4 were rejected under 35 USC §103(a) as being unpatentable over Swaminathan et al (U.S. Patent US 5,717,712) in view of So et al (U.S. Patent US 5,179,420); Claims 5-6 were rejected under 35 USC §103(a) as being unpatentable over Swaminathan et al in view of So et al and further in view of Plizak et al (U.S. Patent US 3,725,566); Claims 7-10 were rejected under USC §103(a) as being unpatentable over Swaminathan et al in view of So et al and further in view of Ziari et al (U.S. Patent US 6,215,809 B1); Claim 11-14 were rejected under USC §103(a) as being unpatentable over Tarusawa et al (U.S. Patent US 5,812,296) in view of Swaminathan et al and So et al; and Claim 15 was rejected under 35 USC §103(a) as being unpatentable over Tarusawa et al in view of Swaminathan et al and So et al, and further in view of Domon et al (U. S. Patent US 5,771,111).

In light of the outstanding grounds for rejection, to expedite issuance of a patent from the present application, Claim 11 has been amended. No new matter has been added.

The outstanding Office Action states that So et al discloses a laser device with a thermo-electric cooler for maintaining constant temperature, but the thermo-electric cooler for maintaining constant temperature can be used to control the wavelength of the laser device. The outstanding Office Action states, therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to control the wavelength of the laser by controlling the heat radiated from the exothermic-effect-only heat source, in

the system of Swaminathan et al in order to reduce additional noise associated with wavelength tuning.

Applicants respectfully traverse the outstanding grounds for rejection, because in Applicants' view, amended Claim 11 patentably distinguishes over the applied prior arts.

In particular, So et al, as described at column 5, lines 40-44, discloses a thermo-electric cooler located close to a laser to heat or cool so as to maintain a constant temperature of the laser and hence a constant wavelength of the optical signal.

Instead, Claim 11 recites a heat source to control the temperature of the laser and the wavelength controller to control the wavelength of the optical signal by tuning the exothermic-effect-only heat source on and off. This structure enables a simple method of wavelength control and decreases the manufacturing cost. In Claim 11, the master station is configured to receive an optical multiplex signal from the plurality of slave stations. For example, when two signals are multiplexed, the beat noise is generated in the master station if the wavelengths of two signals are close to each other. The beat noise is not generated if the wavelengths of two signals are apart from each other by more than a predetermined amount. Unlike the cited references, the invention recited in Claim 11 need not maintain a constant wavelength of each of the two signals. Therefore, in this example, the invention recited in Claim 11 merely needs to heat one of the two lasers so as to suppress the optical beat noise. Claim 11 merely requires tuning the exothermic-effect-only heat source on and off to control the wavelength of the optical signal, and thus, the control of heat source can be simpler than that of So et al.

Further, in So et al, the heat source always has to be turned on so as to control the temperature to be within a predetermined range. In contrast, Claim 11 recites the wavelength controller configured to control the wavelength of the optical signal by tuning the exothermic-effect-only heat source on and off. For example, the heat source is turned off if

temperature signal 107 in Fig.3 of Applicant's disclosure shows a higher temperature than the preset temperature value 108 in the Fig.3. On the other hand, the heat source is turned on if temperature signal 107 shows a lower temperature than the preset temperature value 108. In this type of control, the heat source is easily controlled and need not to be turned on all the time; thus, power consumption can be reduced.

Accordingly, it is respectfully submitted that So et al fails to cure the deficiencies of Tarusawa et al and Swaminathan et al. and clearly do not render obvious the claimed light transfer system.

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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